

THE RELATIONSHIP OF HARDINESS TO WORK SATISFACTION
AMONG
CRITICAL CARE NURSES

by

ROBIN LYN JOHN

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Department of Nursing

The University of British Columbia
Vancouver, Canada

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ABSTRACT

The purpose of this study was to investigate the role that a stress-resistant characteristic, hardiness, might play in work satisfaction among critical care nurses. A descriptive correlational design was used to measure the relationship between hardiness and work satisfaction. A Demographic Information Form, the Personal Views Survey (measuring hardiness), and the Index of Work Satisfaction were completed by 109 full-time critical care staff nurses in three urban hospitals. The scores on the latter two instruments were correlated using Pearson's product-moment correlation.

Correlation coefficients showed a weak relationship between hardiness and work satisfaction which strengthened when challenge, the functionally distinct part of hardiness, was removed. The relationship further strengthened when pay, a work satisfaction component which defied the normal distribution assumption, was eliminated from the work satisfaction score. Hardiness explained only 17.5% of the variance in work satisfaction indicating that more is involved in work satisfaction than possession of the appropriate personal characteristics.

Future studies of the relationship between hardiness and work satisfaction should examine causality by including all the variables in the model (hardiness, working conditions, subjective stress, work satisfaction and work performance) in a longitudinal or path analysis design.

Although the relationship between hardiness and work satisfaction has not yet been shown to be causal, increasing a

sense of hardiness may improve work satisfaction among critical care nurses. Teaching them hardiness may improve retention and quality of care, and minimize grievances, absenteeism, and strikes. Other implications for nursing and recommendations for further research are presented.

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CHAPTER I

INTRODUCTION

Background

Rising health care costs are a major concern of governments and taxpayers alike. Funding for health care which once was liberal is now restricted, contributing to re-evaluation of all of the expenditures within hospitals. Within nursing departments, unnecessary costs arise from absenteeism, turnover, and strikes, some of which stem from nurses' underlying dissatisfaction with their work and the rewards it offers (Seybolt, Pavett, & Walker, 1978; Seybolt, 1986). Loss of nurses, especially highly-trained critical care nurses, is costly because of the expense of orientation and teaching of new nurses. By directing attention to work satisfaction of critical care nurses, administrators may be able to minimize the costs arising from dissatisfaction and to perhaps increase performance ratings and client satisfaction (Packard & Motowidlo, 1987; Seybolt et al., 1978).

The causes of work dissatisfaction among critical care nurses are many according to current research. Some, such as communication problems, noise level, frequent shift changes, and overtime can be remedied. Others, such as managing multiple technical devices, meeting the needs of families, caring for people in critical condition, and dealing with death, are inherent in the work. The commonality among the dissatisfying aspects of nursing is that they act as stressors (Ivancevich & Matteson, 1980; Packard & Motowidlo, 1987).

In the quest for knowledge about the management of stress

and the factors which buffer the impact of stress on the individual, such factors as social support, exercise, physical constitution, and personality have been uncovered. One such buffer, identified by some researchers, is a personality characteristic called hardiness (Kobasa, Maddi, Puccetti, & Zola, 1985). A hardy person resists stress with transformational coping, a learned ability to find solutions, to eliminate negative stressors, and to view those negative stressors which cannot be realistically changed with a positive outlook (Dane, 1990). Those critical care nurses who are able to respond creatively to stressful situations and who are able to view unalterable stressors in positive ways may be more satisfied with their jobs (Norbeck, 1985).

This study examined the relationship between hardiness and work satisfaction in critical care nurses. If hardy nurses prove to be more satisfied with nursing and the relationship is found in further research to be causal, hardiness can be cultivated in nurses, especially in those destined for such stressful areas as critical care.

Conceptual Framework

The conceptual framework for this study consists of a model of the factors affecting work satisfaction and work performance, developed by Packard and Motowidlo (1987). The model (Figure 1) identifies two factors which affect work satisfaction and work performance: job conditions and the personal characteristics of the individual (his or her approach to life). The job conditions and personal

characteristics act by determining the amount of stress the person perceives. This, in turn, affects the amount of depression or hostility he or she feels. The resulting emotions determine the amount of work satisfaction experienced or the quality of the work performed.

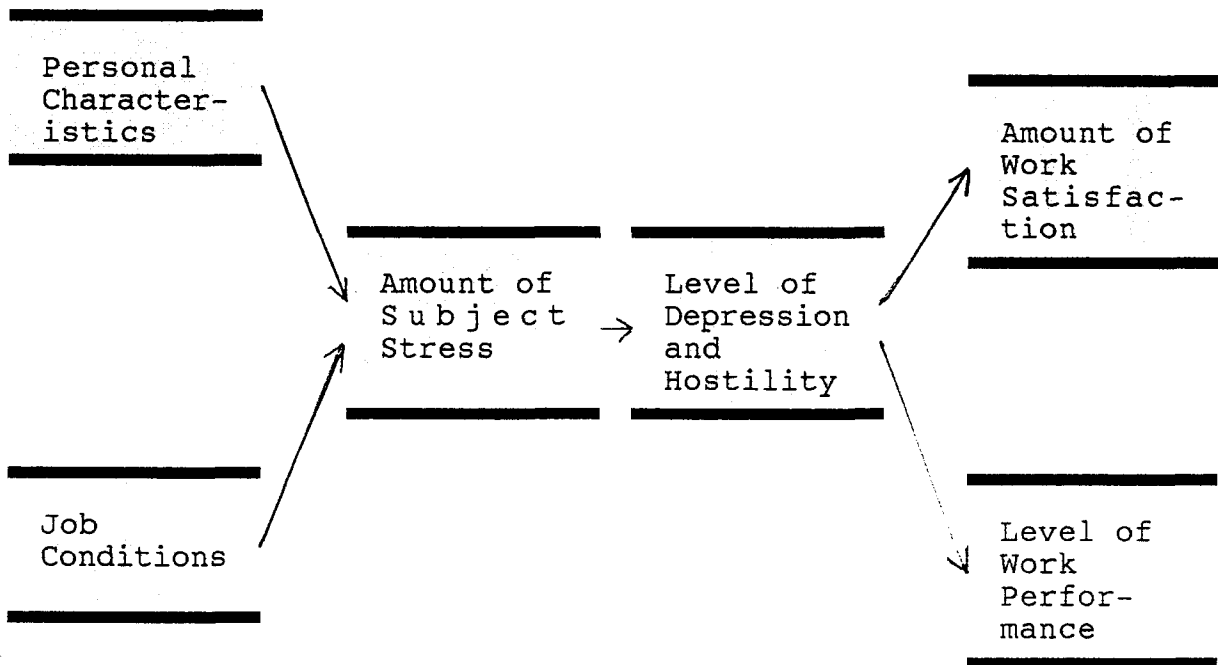


Figure 1. Factors Affecting Work Satisfaction and Performance (Packard and Motowidlo, 1987).

For this study, a personality concept, hardiness (Kobasa, 1979), has been inserted into the model replacing the general concept, personal characteristics. While studying work stress and the factors which buffer it or decrease its effects, Kobasa and Maddi (Kobasa, 1979) discovered that the most important factor in diminishing work stress was a personal characteristic they called hardiness. It allows the person to view change as a challenge, to feel in control of his/her own rewards, and to feel committed to life rather than alienated

from it. This personality concept, with its three parts, control, commitment, and challenge, allows the hardy person to cope more effectively with life's stressful events through transformational coping (Maddi & Kobasa, 1984), interacting with events so they became less stressful.

The revised model (Figure 2) identifies the factors affecting work satisfaction and work performance as hardiness and work conditions. These factors act by determining the amount of stress perceived and the amount of depression and hostility experienced, which then influence the quality of the work satisfaction and performance.

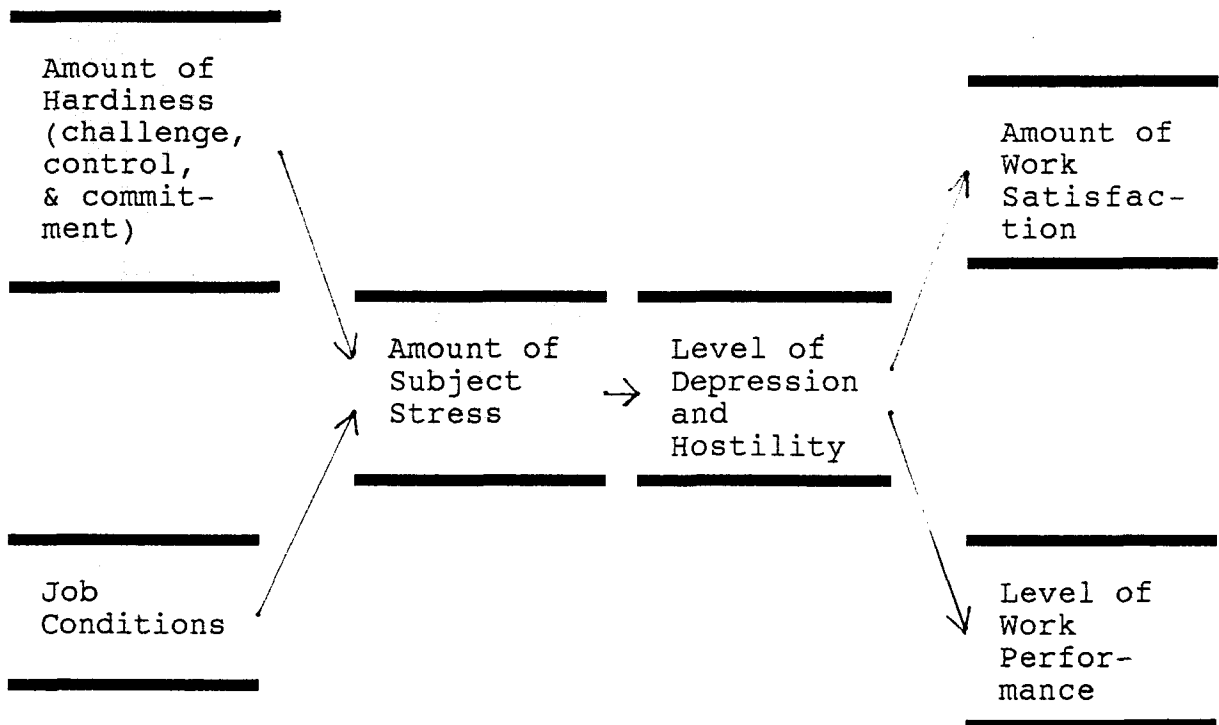


Figure 2. Hardiness Affecting Work Satisfaction and Performance (Adapted from Packard and Motowidlo, 1987).

Research Questions

The study was designed to answer the following four questions. Among critical care nurses, what is the relationship between:

1. Hardiness and work satisfaction?
2. Control and work satisfaction?
3. Commitment and work satisfaction?
4. Challenge and work satisfaction?

Definition of Terms

Hardiness

Hardiness was defined as a personality characteristic which acts as a buffer against the effects of stress (Kobasa, 1979). It was measured by the revised 50-item hardiness tool entitled the Personal Views Survey (S. Dane, personal communication, 1990; Lambert & Lambert, 1987).

Work Satisfaction

Work satisfaction was defined as "a pleasurable emotional state resulting from the fit between the individual and his job and its environment" (Hopkins, 1983, p.22.) It was measured by a tool designed for nurses called the Index of Work Satisfaction Tool (Stamps & Piedmont, 1986).

Critical Care Nurses

Critical care nurses were defined in this study as registered professional nurses who care for critically ill people whose physical conditions are unstable and require constant attention (Maloney, 1982). This definition included nurses employed in emergency departments, post-anaesthetic rooms,

coronary care units and all types of intensive care units (both medical and surgical).

Assumptions

For purposes of this study, it was assumed that nurses working in critical care units experience some stress and that increased stress causes decreased work satisfaction. It was further assumed that respondents recognized how they felt about the items included in the questionnaires and that they responded honestly.

Limitations

The following were identified as limitations of the study. The low questionnaire return rate limits the generalizability of the findings. The data were based on self-reports, therefore, responses were subject to bias and human failings of memory. The association between hardiness and work satisfaction was examined at one point in time so no cause-and-effect can be established.

Significance of the Study

It has been reported that increased work stress contributes to decreased work satisfaction, which in turn leads to reduced performance, absenteeism, and higher levels of turnover (Seybolt, 1986). It has also been shown that work stress is best managed by persons who have the appropriate personality characteristics (Pearlin & Schooler, 1978). Those who were more committed, more open to change as a challenge,

and who believed life's rewards came from their own efforts have been found to be more hardy or stress-resistant (Kobasa, Maddi, Pucetti, & Zola, 1985). If hardiness can be shown to contribute to work satisfaction, it is possible that by nurturing hardiness in nurses, there could be improved retention (Cotton & Tuttle, 1986; Lemler & Leach, 1986; Seybolt, 1986), decreased illness and orientation costs (Taunton, Krampitz, & Woods, 1989) and better nursing care (Packard & Motowidlo, 1987).

Although there is evidence suggesting a link between hardiness and work satisfaction, it has not been explored in critical care nurses. Two reasons exist for examining this group: (1) historically, there have often been shortfalls in the supply of critical care nurses (Helmer & McKnight, 1988), and (2) the cost of replacing and instructing them in their specialty is particularly high (Seybolt et al., 1978).

CHAPTER II

LITERATURE REVIEW

The literature review is organized into two major categories. The first is a review of studies of the relationship between personal characteristics and stress resistance, including hardiness in nurses. The second deals with the relationship between personal characteristics, including hardiness, and work satisfaction.

Personal Characteristics Affecting Stress Level

Stress Resistance in General

Because stress adversely affects work satisfaction (Norbeck, 1985), performance (Packard & Motowidlo, 1987), and health (Kobasa, 1979), researchers have begun looking at stress-resistance resources or buffers which modify stress effects.

A classic piece of research on coping with stress is a study by Pearlin and Schooler (1978). From a clustered sample of 2300 households in Chicago, an equal number of men and women between the ages of 18 and 65 were interviewed. Data regarding stress were gathered from exploratory interviews, and eleven life strain factors were delineated. Structured questions were developed from these.

The authors described three essential factors for coping: psychological resources, social resources, and coping responses. Among their findings, Pearlin and Schooler observed that possessing the right psychological resources,

defined as "personality characteristics that people draw upon to help them withstand threats posed by events and objects in their environment," was more effective in dealing with work problems than were coping responses. These personality characteristics included a "positive attitude toward oneself" and "the extent to which one regards one's life-chances as being under one's own control (internal locus of control), in contrast to being fatalistically ruled" (Rotter, Seeman, & Liverant, 1962)--characteristics similar to hardiness. Although the findings are related to a general population, they may have relevance for critical care nurses.

Another study examined coping in a general population. Benner (1984), using grounded theory, interviewed 15 people regarding their coping mechanisms for dealing with work stress. Seven participants described "decreased stress over time as a result of confidence they gained from prior experience", which prevented a situation from being considered stressful. In describing how the participants dealt with stress, Benner identified strong themes of commitment, seeing life as a challenge, and feeling in control and confident that things would end well. She felt that this did not arise from a sense of control over the environment but from what she called "a cushion of experience." For eight of the participants who did not benefit from experience, she felt that a fear of failure and belief in the efficacy of worry had prevented the development of a cushion of experience. In general, those who appeared more stress-resistant definitely felt committed to their work, challenged by it and believed

they were largely in control of their own rewards (pp.16-148). Again, although the data were collected from the general population, the concepts developed appear relevant for nurses.

Chiriboga and Bailey (1989) studied the strategies used by 544 nurses to cope with their work in medical-surgical and ICU areas in six hospitals. They identified and described seven kinds of copers: normative, non-reflective, conflicted, avoidant, pragmatic, cool-and-collected, and super. Pragmatic and cool-and-collected copers experienced the least emotional exhaustion, depression, anxiety and depersonalization. In both of these types of stress-resistant nurses, high involvement or commitment towards work and high perception of autonomy or control were typical.

The personality characteristics of critical care nurses were examined by Levine, Wilson and Guido (1988) in an effort to determine the type of person who enjoyed critical care nursing and would remain in it. Data were collected by mail-out survey from 200 members of the American Association of Critical Care Nurses (AACN), a 20% return rate. The nurses who responded tended to be more self-sufficient, assertive, conscientious, persevering, experimenting, resourceful, and controlled than the normative group with whom they were compared. These characteristics are again similar to the hardiness components of control, commitment, and challenge.

In a study regarding personal characteristics and critical care nursing stress, MacNeil and Weisz (1987) used Bandura's (1977) self efficacy theory. Self efficacy is the "degree of mastery a person feels that he or she has over his

or her life situations" (p. 274). In this study, 80 critical care nurses were compared with 106 general duty nurses. The self efficacy questions related to helplessness, locus of control, and belief in one's ability--almost identical to hardiness. General duty nurses reported significantly higher psychological distress and absenteeism than did the critical care nurses. There was no discernable difference between the two groups in terms of social support or self efficacy. Most notable was the negative correlation between self efficacy and a measure of psychological distress.

Hardiness in Nurses

One particular personal characteristic offering stress resistance, hardiness, has received extensive attention. Kobasa (1979) described hardiness as a personality structure which permits its possessor to experience high degrees of stress without falling ill. Hardy people are those who: 1) believe that they can control events; 2) feel committed to activities; and 3) view change as challenge. Kobasa believed hardiness modifies stress by transformational coping (Maddi & Kobasa, 1981). Transformational coping causes individuals to appraise a situation more positively and to use more effective coping strategies (Maddi & Kobasa, 1984).

Keane, DuCette, and Adler (1985) used Kobasa's theory to study the effects of hardiness on the stress of ICU and non-ICU nurses. Their sample consisted of 96 nurses from one hospital. The results indicated that nurses in ICUs did not experience more burnout (exhaustion from stress as measured by the Burnout Scale by Maslach and Jackson, 1981) than did

nurses in other units. The results of all of the hardiness measures correlated in the expected direction with burnout, with the exception of the Security Scale (Hahn, 1966), measuring challenge.

Hardiness effects on burnout of nurses were also researched by Rich and Rich (1987), using the same design and instruments as in the Keane, DuCette, and Adler study. The 100 nurses who returned the questionnaires were from a spectrum of work units in one hospital. The results showed a significant inverse relationship between hardiness and burnout. Age and burnout were also inversely related. It is interesting to note that the effects of hardiness and age were both independent and additive in their effect on burnout.

In another study which considered work stress, hardiness, and burnout in a cross section of staff nurses, McCranie, Lambert, and Lambert (1987) collected data from 107 registered nurses in one community hospital (a 41% response rate.) Hardiness was found to explain a significant percentage of the burnout scores. Nurses who were less hardy reported more frequent job-related stress and higher levels of burnout. In spite of its association with decreased stress, the researchers found that hardiness did not appear to prevent high levels of job stress from resulting in high levels of burnout.

Hardiness, stress, and burnout in critical care nurses were also studied by Topf (1989) with different results. A convenience sample of 100 critical care nurses from two hospitals was used, with return rates of 92% and 48%

respectively. Hardiness was found to account for a significant amount of occupational stress. That is, greater hardiness was associated with decreased stress and emotional exhaustion. Of the hardiness components, only commitment was associated with less burnout and only control with less occupational stress. Occupational stress, they found, was not linked to burnout. The authors concluded that the study did not provide evidence of a stress-buffering effect of hardiness.

In spite of weak sampling methods and design weaknesses, nursing stress studies showed an association of hardiness (and related personality constructs) with decreased stress and burnout (or hostility and depression as the model terms it). Hardiness may, in turn, have an effect on work satisfaction of nurses.

Personal Characteristics and Work Satisfaction

Hardiness-like Characteristics and Work Satisfaction

Current research has, in fact, indicated that hardy people may experience more work satisfaction. Norbeck (1985) found that job stress was inversely related to work satisfaction in ICUs, indicating that decreased ICU stress would possibly improve work satisfaction among its nurses.

Rhodewalt and Zone (1989) found that hardy women (their sample included only women) were more satisfied with their lives and with their husbands (if they were married) than those who were less hardy. This is indeed different from work satisfaction, but perhaps indicated a tendency to "benign

appraisals cushioning hardy women from experiencing" negative life change as "disruptive" (p.86).

Control, part of the hardiness concept, has frequently been associated with increased work satisfaction (Spector, 1982, 1987; Walek, 1979; Weisman, 1982; Weisman, Alexander, & Chase, 1981). For example, in testing a model designed to determine the effects of stress on work satisfaction, Tetrick and LaRocco (1987) discovered that understanding, prediction, and control had moderating influences on perceived stress, but only control was related to work satisfaction. In another study examining the effect of the interaction of personal characteristics and working conditions, Kobasa and Hilker (1982) found that powerlessness, as measured by the Alienation Test, part of the control area of hardiness was the most consistent and powerful determining factor in the way people in general perceived their work (Maddi, Kobasa, & Hoover, 1979).

Studies of nurses also show that increased control is associated with increased work satisfaction. McLaney and Hurrell, Jr. (1988), studying Canadian nurses, concluded that increased job control contributed to increased work satisfaction. Dear, Weisman, Alexander, and Chase (1982) reported similar findings. They noted "the strongest determinant of job satisfaction in critical care nurses is a sense of autonomy followed by a sense of internal control" (p.564). In these studies, control appeared to be linked to work satisfaction of nurses.

Finally, Arsenault and Dolan (1983) found that people who

had an internal locus-of-control and who were also striver-achievers (very similar to hardy people) did not respond to job context stress with either decreased performance or increased absenteeism, as did those with other orientations. The evidence suggests that hardy critical care nurses may be more satisfied with their work.

Hardiness and Work Satisfaction

Two studies have directly examined the relationship between hardiness and work satisfaction (Kennedy, 1988; Manning, Williams, & Wolfe, 1988), although not with nursing subjects. In the study by Manning et al., the variables examined were the direct and moderating relationship between hardiness, life and work stressors, and health-related outcomes. A sample of 468 subjects working in either an insurance company or a manufacturing company were surveyed. The results showed that hardiness was related negatively to all the stressor variables and all negative outcomes and correlated positively with work satisfaction, positive affect, and quality of life. Hardiness components, control and commitment, behaved similarly, but challenge did not. Interactions of hardiness with stress indicated that, as stress increased to high levels, people who were hardy experienced a more rapid increase in negative outcomes than did those who were low in hardiness--an interesting paradox. At low-to-moderate stress levels, hardiness was not found to buffer the effects of stress on outcomes, but to act directly on them.

Kennedy's (1988) study examined the relationship of the

degree of hardiness and the level of stress to the amount of job satisfaction in 173 law enforcement officers. Hardiness was found to predict work satisfaction, but not through a stress-buffering effect. Again, hardiness varied inversely with stress and predicted work satisfaction, but the mechanism of the effect remains unknown.

In summary, the literature concerning work satisfaction and the effect of stress and stress-resistance upon it is scarce. Current studies indicate that work stress decreases work satisfaction which, in turn, increases absenteeism and turnover. It has been proposed from the model and other research that appropriate personality characteristics affect the perception and management of work stress and work satisfaction. One personality characteristic showing promise as a source of stress resistance is hardiness, composed of three components, control, commitment, and challenge. Parts of hardiness and hardiness-like concepts have been associated with increased work satisfaction. In two studies using different measurement tools than those used in this study, moderate correlations between hardiness and work satisfaction have been found for office workers and police officers.

Demonstration of an association between hardiness and higher levels of work satisfaction in critical care nurses will provide a basis for further causal studies. If increasing hardiness levels can be shown to improve work satisfaction in this group of nurses, improved retention, quality of work, and general working atmosphere may result. These, in turn, may decrease the health care costs resulting

from grievances, absenteeism, and turnover among this highly-trained group of nurses.

CHAPTER III

METHODOLOGY

This chapter presents information about data collection and processing. The information includes the research design, the data collection settings, the criteria and process for selecting the sample, a description of the study instruments, the procedure for data collection and analysis and the means for protecting the rights of the subjects.

Design

A descriptive correlational design was used to answer the research questions regarding the relationship between hardiness and work satisfaction.

Settings

Data were collected in three metropolitan Toronto hospitals. Hospital #1 is a Roman Catholic hospital in the downtown area and is well-known for its cardiac service. Hospital #2 is moderate-sized and renowned for its service to burn victims. Hospital #3, a large facility, lies on the edge of suburbia and specializes in injuries. Hospitals #2 and #3 have no religious affiliation.

Sample Selection and Criteria

The criterion for selection was full-time employment as a critical care nurse in one of the following areas: post-anaesthetic room, coronary care unit, emergency department, or any type of intensive care unit. Those nurses responsible for

liaison with researchers sought approval from the head nurses of each of the critical care units for permission to approach their staff. A few of the head nurses chose not to participate. However, a total of 446 registered nurses in the three institutions, 233 in Hospital #1, 120 in Hospital #2, and 93 in Hospital #3, met the criterion and were willing to participate in the study.

Instruments

Three instruments were used in this study: the Personal Views Survey, the Index of Work Satisfaction, and the Demographic Information Form.

Personal Views Survey

The first, the Personal Views Survey, a 50-item revised scale, measured hardiness (Appendix A). This tool was developed from personality scales used in research to measure related psychological concepts (S. Dane, personal communication, November, 1989).

Until recently, items from five scales on existing questionnaires measured hardiness negatively. The Alienation Test, which included Alienation from Work and Alienation from Self Scales (Maddi, Kobasa, & Hoover, 1979), measured commitment. The External Locus of Control Scale (Rotter, Seeman, & Liverant, 1962) and the Powerlessness Scale (Maddi, Kobasa, & Hoover, 1979) measured control. The Security Scale of the California Life Goals Evaluation Schedules (Hahn, 1966) measured challenge. Low scores on these scales (indicating low alienation, low powerlessness, and a low need for

security) were assumed to show high levels of commitment, control, and challenge (that is, control, commitment and challenge were measured negatively).

It should be noted that, although studies concerning stress resistance have supported the idea of the hardiness concept, they have also shown difficulties with hardiness measurement and functioning. Researchers have criticized the measurement ability of the hardiness tool in three regards.

First, the reliability for the Security scale measuring challenge was found by Manning et al. (1988) to be 0.46, as determined by Cronbach's alpha. Hull, Van Treuren, and Virnelli (1987) found similar alpha coefficients (0.41 and 0.44.) and termed these levels "unacceptably low."

Second, some researchers have noted that the components act independently, rather than functioning as a whole. Hull et al. (1987) noted that challenge correlated negatively with the other two components, commitment and control. Wagnild and Young (1991), in a recent review of hardiness literature, noted that only control and commitment on the hardiness scale acted towards health outcomes as predicted. Kobasa, Maddi, and Courington (1981) concluded that because the components acted independently towards health, either "the measures for control and commitment were less accurate than that for challenge," or that "challenge includes commitment and control." To resolve this confusion, several researchers have suggested measuring the effect of each of the hardiness components separately as well as the hardiness effect as a whole. Composite hardiness and individual component

measurements have been included in this study.

Third, several authors have questioned whether negative measurement produces valid results. There has been some doubt as to whether scores showing low need for security, lack of external locus of control, and low alienation do, in fact, indicate a hardy person.

Others have defended the value of the hardiness tool (Hannah, 1988; Hannah & Morrissey, 1986; V.A. Lambert, personal communication, December, 1989; Manning et al., 1988; McNeil, Kozma, Stones, & Hannah, 1986). McNeil et al., for example, extensively tested both the long and short versions of the tool. They found the reliability ranged from 0.6 to 0.7 based on internal consistency and test-retest examinations. McNeil et al. concluded that hardiness was heterogeneous, a grouping of personality characteristics, the components of which can and should be measured separately.

In response to the above criticisms, the five scales have now been revised by the Hardiness Institute into one 50-item tool called the Personal Views Survey, which includes both negatively- and positively-worded items (S. Dane, personal communication, November, 1989; Lambert & Lambert, 1987). This tool assesses the commitment, control, and challenge dimensions of hardiness as well as providing a composite hardiness score. The revised questionnaire, the Personal Views Survey, has been utilized in this study.

Validity and reliability data for the revised instrument were provided by the Hardiness Institute, which manages it. The alpha coefficient given was 0.92, "based on over 100,000

subjects from widely varying walks of life." The reliability of the tool, based on a test/retest of over 400 subjects, showed an "item-to-item correlation of about 0.96 for the individual items."

According to the Hardiness Institute, the process for calculation of the hardiness scores is as follows: each answer on the 50-item Personal Views Survey is "weighted to create a portion of one of the subscales and is checked on the other two." Using the "mathematical process of re-expression," these scores then go "through a logit or log process with a constant" (S. Dane, personal communication, September 23, 1992).

The theoretical range of total scores is 1 to 150; however, no one is completely lacking in hardiness or completely hardy. The mean hardiness score for the normative sample of subjects tested by the Hardiness Institute was reported as 74.02, with a standard deviation of 9.60 (S. Dane, personal communication, December, 1989). Higher scores indicate greater hardiness or stress resistance while lower scores indicate greater vulnerability to stressors (S. Dane, personal communication, November, 1990).

The theoretical ranges of scores for the components are control 1-50, commitment 1-50, and challenge 1-50. For the normative sample tested by the Hardiness Institute, the means and standard deviations for each of the components are: control, 39.00/4.33; commitment, 38.00/4.33, and challenge, 34.00/5.26) (S. Dane, personal communication, June 28, 1994).

Index of Work Satisfaction

The second tool, the Index of Work Satisfaction (Stamps & Piedmonte, 1986), was designed to measure the work satisfaction of hospital nurses (Appendix B). The Index, a 44-item, 7-point Likert scale tool, evaluates the satisfaction deriving from six components of work satisfaction: pay, autonomy, task requirements, organizational policies, professional status, and interaction (interpersonal contact).

This tool consists of two parts, one of which evaluates expectations or importance and the other, the degree to which these are met. The Index of Work Satisfaction is calculated from weighting the satisfaction according to ratings of the components. Higher scores indicate higher work satisfaction.

When a component receives both a high importance (or expectation) value and a high satisfaction value, it can be assumed that the respondent is satisfied in that area. When a component is considered low in importance, but the respondent gives it a high satisfaction score, it can be assumed that this area is also satisfactory. However, when a component is given a high importance but a low satisfaction score, this indicates an area for improvement. When both expectation and satisfaction scores are low, it may be that satisfaction with this component is unattainable and it has been devalued or simply is not important, not a source of satisfaction (Stamps & Piedmonte, 1986, p.53). Thus, the lack of highly-rated items has a greater effect on satisfaction than the lack of those rated lower in importance. In this type of scoring, called "discrepancy scoring" (Hopkins, 1983, p.28), the wider

the discrepancy, the greater the problem.

The Index of Work Satisfaction tool was developed in 1978. Minor revisions have been made recently by the authors so the reliability and validity information is limited at this time to the authors' own test results. The Cronbach's alpha, split-half reliability, ranged from 0.52 to 0.81 for the components with a total alpha of 0.82. Validity was tested by factor analysis using a principal-component analysis, varimax rotation. It produced 12 factors which accounted for 62% of the variance. Each of the loadings was above the 0.4 level (Stamps & Piedmonte, 1986).

Information regarding normal values for the revised Index of Work Satisfaction scale is also limited. The authors found the range of total scale scores to be 44-308. They suggested that a total raw satisfaction score below 50% (155) be viewed as a warning about lower levels of satisfaction (Stamps & Piedmonte, 1986).

During the authors' testing, the comparison of weighted and unweighted scoring (with or without expectations or importance) consistently produced a Kendall's Tau of 0.86, indicating no theoretical difference between the two sets of scores (Stamps & Piedmonte, 1986). That is, satisfaction scores were virtually the same whether or not expectations (or importance) were included in the calculations. However, the authors, Stamps and Piedmonte (1986), still recommend the inclusion of Part A, the expectations, and the calculation of a weighted index until norms can be established.

Demographic Information Form

The third tool, the Demographic Information Form, was developed by the investigator to include selected demographic factors of interest. They are:

- (1) gender
- (2) age
- (3) level and type of nursing education
- (4) race
- (5) marital status
- (6) hospital and work area
- (7) religion
- (8) amount and type of shiftwork
- (9) country of origin
- (10) length of time worked both in a critical care setting and in this unit
- (11) length of time worked in nursing prior to critical care

A copy of the Demographic Information Form is presented in Appendix C.

Data Collection Procedure

Information sessions were held with the critical care staff in the each of the institutions to explain the purpose of the study and to elicit participation. Several such sessions were held at each hospital, at the discretion of the head nurses, in order to reach as many nurses as possible. Nurses who indicated a willingness to participate in the study were given information packages containing an explanatory

letter, the three instruments, and an addressed, stamped envelope for return of the completed instruments. A supply of packages was left for those on other shifts. Participants were asked to return the completed information within a week.

Data Analysis

The Personal Views Survey data were sent to the Hardiness Institute in Wyoming for scoring. (The instrument is copyrighted and all scoring must be provided by the Institute.)

Index of Work Satisfaction scores were calculated according to the authors' directions, using Lotus 123 (See Appendix E for a complete description of the calculation of the Index of Work Satisfaction). Satisfaction scores were weighted according to importance. All the data from the three tools were analyzed using SYSTAT, a statistics and graphics package for personal computers (Wilkinson, 1990). Descriptive statistics (range, mean, mode, median and standard deviation) were calculated for scores from the Personal Views Survey and the Index of Work Satisfaction. The relationship of hardiness and each of its components to work satisfaction was analyzed using Pearson's product-moment correlation with a significance level of 0.05 for the Bonferroni probabilities (Wilkinson, 1990).

Protection of Human Rights

Prior to data collection, the research proposal was submitted to the University of British Columbia Behavioural

Sciences Screening Committee For Research and Other Studies Involving Human Subjects and to the appropriate hospital committees. These committees examine studies for the provision of procedures for protection of subjects' rights. The investigator then met with hospital personnel and committees as requested to explain the procedure, to answer any questions, and to provide assurance of confidentiality.

The information packet given to those agreeing to participate included a letter describing the purpose of the study and procedure for return of responses. It also reinforced the anonymity and confidentiality of responses. A copy of the information letter is presented in Appendix D. It was assumed that consent to participate was indicated by return of the questionnaire.

CHAPTER IV

PRESENTATION AND DISCUSSION OF FINDINGS

In this chapter, the findings are presented in three sections: demographic characteristics, hardiness and work satisfaction levels, and the relationship of hardiness to work satisfaction.

Demographic Characteristics of Respondents

Of the 446 critical care nurses employed in the participating units, 109 (22%) responded. The greatest number of participants, 67 (or 61.47% of the total), came from Hospital #1, a response rate of 28.75%. Hospital #2 provided 19 responses (17.43%), a response rate of 15.83%. Hospital #3 yielded 22 participants (20.18%) for a response rate of 23.65%. One person did not designate his or her workplace.

The response rate was low considering the researcher had spoken directly to the staff and had returned to the hospitals several times as a reminder to complete the forms. It was lower than the response rate for Keane et al. (1985) (53%) and McCranie et al. (1987) (41%). Keane noted that factors such as the busyness of ICU unit staff, the length of the questionnaire, and lack of followup contribute to low return rates.

The demographic profiles of the subjects consisted of personal and professional information. The personal data requested were gender, age, race, marital status, religion, and country of origin of the family. Professional data consisted of level and type of nursing education; hospital and work unit; type and amount of shiftwork; and length of time

worked in the unit, in critical care, and in nursing prior to critical care.

Personal Characteristics

Gender

Of the 109 respondents, 5 (4.59%) were male and 100 (91.74%) female. Four individuals (3.67%) did not respond to this question.

Age

As shown in Table 1, the majority of the respondents, 82 (75.22%), fell into the age range of 20 to 40 years. One-half of these, 41 (37.61%), were between 20 and 29 and the other half between 30 and 39. A further 19 (17.43%) were 40 to 49 years and 3 (2.75%) were between 50 and 59 years. Five respondents (4.59%) did not indicate their age.

Table 1

Ages of Respondents

Age	Frequency	Percentage
20-29	41	37.61
30-39	41	37.61
40-49	19	17.43
50-59	3	2.75
60-69	0	0.00
No Response	5	4.59

Note. Percentages do not total 100 due to rounding.

Race

As Table 2 shows, the majority of respondents, 91 (83.49%), were White. Eight (7.34%) were Asian, two (1.83%) Black, and two (1.83%) described themselves as "Other." The remaining 6 (5.50%) did not indicate their race.

Table 2

Races of Respondents

Race	Frequency	Percentage
White	91	83.49
Asian	8	7.34
Black	2	1.83
Native Indian	0	0.00
Other	2	1.83
No Response	6	5.50

Note. Percentages do not total 100 due to rounding.

Marital Status

Approximately one-half of the respondents, 51 (46.79%), were single and most of the remainder, 41 (37.61%), were married, as shown in Table 3. A small number were living together, 6 (5.50%), separated, 3 (2.75%), or divorced, 4 (3.67%). Four respondents (3.67%) did not respond to the question.

Table 3

Marital Status of Respondents

Marital Status	Frequency	Percentage
Single	51	46.79
Married	41	37.61
Living Together	6	5.50
Divorced	4	3.67
Separated	3	2.75
No Response	4	3.67

Note. Percentages do not total 100 due to rounding.

Religion

As shown in Table 4, the data regarding religion indicated that most respondents were either Protestant, 48 (44.04%), or Roman Catholic, 38 (34.86%). Two (1.83%) were Jewish. Nine respondents (8.26%) indicated they fell into the "other" category, 8 (7.34%) into the "none" category, and 4 (3.67%) did not respond.

Country of Origin of Family

Although most respondents, 55 (50.46%), reported the country of origin of their families to be either Canada or the U.S.A., there was much diversity within the total group, as shown in Table 5. The second largest group of respondents, 17 (15.60%), came from the United Kingdom (Scotland, Ireland, and England). Another large group, 10 (9.17%), immigrated

Table 4

Religions of Respondents

Religion	Frequency	Percentage
Protestant	48	44.04
Catholic	38	34.86
Jewish	2	1.83
Other	9	8.26
None	8	7.34
No Response	4	3.67

from continental Western Europe (Sweden, Greece, France and Holland). Six (5.50%) reported roots in South America, Barbados or Jamaica; and four (3.67%) were from Russia, Poland, Latvia, and Lithuania. Three (2.75%) came from Hong Kong or China, and another three (2.75%) from New Zealand. Two (1.83%) derived from the Philippines and one (0.92%) person from India. Eight (7.43%) respondents did not indicate their family's country of origin.

Professional Characteristics

Professional characteristics consisted of level and type of nursing education, hospital and unit of employment, type and amount of shiftwork, and amount of professional experience.

Table 5

Country of Origin of Families of Respondents

Country	Frequency	Percentage
U.S.A./Canada	55	50.46
Scotland/England	17	15.60
Sweden/Greece/Holland/France	10	9.17
South America/ Barbados/Jamaica	6	5.50
Latvia/Poland/ Russia/Lithuania	4	3.67
China/Hong Kong	3	2.75
New Zealand	3	2.75
Philippines	2	1.83
India	1	0.92
No Response	8	7.34

Note. Percentages do not total 100 due to rounding.

Nursing Education

For the majority of respondents, 82 (75.23%), the highest level of nursing education attained was a diploma, as shown in Table 6. Fourteen (12.84%) held a baccalaureate degree and two (1.83%) claimed associate degree status. Eight (7.34%) of the respondents elected the "other" category but did not specify their education. No one reported holding a Master's degree, and three (2.75%) did not respond to the question.

Table 6

Nursing Education of Respondents

Educational Levels	Frequency	Percentage
Diploma	82	75.23
Baccalaureate	14	12.84
Associate	2	1.83
Master's	0	0.00
Other	8	7.34
No Response	3	2.75

Note. Percentages do not total 100 due to rounding.

Hospital

Numbers and percentages of respondents from each hospital are described at the beginning of this Chapter.

Work Unit

As shown in Table 7, the respondents worked in a wide variety of intensive care units. The largest group, 38 (34.86%), were from medical/surgical or general ICUs. Another large group, 23 (21.10%), worked in cardiovascular or neurosurgical ICUs. Respondents in trauma or burn ICUs numbered 16 (14.68%) and those in acute care or stepdown units, 14 (12.84%). A further 10 (9.17%) responses came from nurses in emergency areas. Smaller groups of respondents were from post-anaesthesia/recovery, five (4.59%), and neonatal ICU, two (1.83%). One person (0.92%) did not designate a work

area.

Table 7

Type of Work Unit of Respondents

Units	Frequency	Percentage
Medical/Surgical or		
General ICU	38	34.86
Cardiovascular or		
Neurosurgical ICU	23	21.10
Trauma or Burn ICU	16	14.68
Acute Care or		
Stepdown Unit	14	12.84
Emergency	10	9.17
Post Anaesthesia/		
Recovery	5	4.59
Neonatal ICU	2	1.83
No Response	1	0.92

Note. Percentages do not total 100 due to rounding.

Type and Amount of Shiftwork.

As Table 8 shows, most respondents, 79 (72.48%) worked two shifts, while 15 (13.76%) worked one shift, 10 (9.17%) worked three shifts, and five (4.59%) did not respond. Almost all respondents, 103 (94.49%), worked 12-hour shifts. Only four (3.67%) worked 8-hour shifts, and two (1.83%) did not respond.

Table 8

Type and Amount of Shiftwork of Respondents

Numbers and Types Of Shifts	Frequency	Percentage
<u>Number</u>		
1 shift	15	13.76
2 shifts	79	72.48
3 shifts	10	9.17
No Response	5	4.59
<u>Type</u>		
12 hour shifts	103	94.49
8 hour shifts	4	3.67
No Response	2	1.83

Note. Percentages do not total 100 due to rounding.

Professional Experience.

Respondents were experienced in both general nursing and critical care nursing. Employment in the current unit ranged from 0-17 years with an average of 5.18 years. They had been employed an average of 6.34 years in critical care, with a range of 0-25 years, and an average of 4.46 years in nursing prior to critical care, with a range of 0-22 years.

In an attempt to determine if this sample is representative of Ontario critical care nurses, data were

requested from the College of Nurses of Ontario. Their most recent statistics were from 1991 and included only age, education, and work area. In addition, the data did not include those who registered after February, 1991 or those who registered for the first time in 1991 (10,719 RNs). It did include 81,401 nurses of whom 10,066 were critical care nurses (M. Wang, personal communication, November, 1993). The College of Nurses group and the study sample appear similar in the demographic parameters available, as shown in Table 9.

To summarize, the average nurse in this study was a single female between the ages of 20 and 40. She was white, Protestant, and reported that her family originated in Canada or the U.S.A. She had a diploma in nursing and worked 12-hour shifts in a medical-surgical or general ICU in a moderate-sized urban hospital. The average nurse had worked 5.18 years in the present work unit, 6.34 years in critical care, and 4.46 years in nursing prior to employment in critical care.

Hardiness Levels Among Respondents

Descriptive statistics for the hardiness levels of the participants are presented in Table 10. This group of participants was found to display a level of total hardiness similar to that in the normative sample, according to the data provided by the Hardiness Institute (S.Dane, personal communication, December 27, 1989). The normative sample mean was 74.02 and this sample mean, 73.53. The difference was not significant, with this sample mean falling within the 95% confidence interval. However, this group of respondents

Table 9

Comparison of Sample and Population of Critical Care Nurses
(CCN) in Ontario

Demographic data	Sample	CCN of Ontario
<u>Age</u>		
18-29	37.61%	24.07%
30-39	37.61%	44.39%
40-49	17.43%	24.31%
50-59	2.75%	6.42%
60-69	0.00%	0.74%
<u>Gender</u>		
Female	91.74%	97.35%
Male	4.59%	2.65%
<u>Education</u>		
Diploma	75.23%	85.65%
Baccalaureate	12.84%	13.06%
Associate	1.83%	0.00%
Masters	0.00%	0.44%
Other	7.34%	0.28%
No Response	2.75%	0.58%

Note. Percentages do not total 100 due to rounding.

displayed less variance (S.D.=7.54) in levels of hardiness than was found in the normative sample (S.D.=9.60). This result was to be expected, given that the subjects in the study were of a more similar background than the normative sample, being largely of the same gender, of a similar age and ethnic background, and working in the same profession in the same geographic area.

Table 10

Hardiness and Hardiness Component Levels Among Respondents

Hardiness and Components	Minimum/Maximum	Mean	Standard Deviation
Hardiness	53.43/89.46	73.53	7.58
Control	27.00/47.00	38.83	3.94
Commitment	25.00/48.00	37.49	5.24
Challenge	16.00/43.00	33.85	5.13

Responses to individual questions were examined by the investigator. The summary statements below were developed for those responses on which there was obvious agreement. The frequency of the responses to the hardiness questions for this group of nurses indicated that they believed strongly in the value of their work. They found their jobs exciting and enjoyed both the variety of the work and the learning involved in it. Answers indicated that they did not seem to mind interruptions or changes. They stated strongly that they knew when they needed to ask for help at work. They also expressed assurance in their ability to correct errors. Responses

showed that they believed their bosses did not reprimand unjustly, and that their efforts at work were rewarded. From their answers, they felt empowered in both their personal and work lives.

Because various researchers, including Kobasa, the originator of the hardiness concept, have questioned the validity of the concept of hardiness, and because the hardiness tool has been newly-revised, intercorrelations were performed among the three components of hardiness and hardiness itself (See Table 11).

The challenge component has not behaved in the same manner as hardiness or the other components in previous research (Funk & Houston, 1987; Hull et al., 1987; Manning et al., 1988; Rhodewalt & Zone, 1989). At times, it has even correlated negatively with hardiness. In this sample, challenge shows correlations in the expected direction but, in the case of the correlation with control ($r = 0.26$), much weaker than the correlations between the other two components, control and commitment. Because challenge has previously functioned distinctly and because it now appears to be more loosely associated with the other hardiness components, hardiness, excluding challenge, was correlated with control and commitment. Correlations were much stronger than those for hardiness including the challenge component.

Table 11

Correlations Among Hardiness and its Components

	Hardiness		Control		Commitment		Challenge	
Hardiness and Components	<u>R</u>	Prob.	<u>R</u>	Prob.	<u>R</u>	Prob.	<u>R</u>	Prob.
Hardiness	-	-	0.72	0.00	0.88	0.00	0.76	0.00
Control	0.72	0.00	-	-	0.55	0.00	0.26	0.01
Commitment	0.88	0.00	0.55	0.00	-	-	0.47	0.00
Challenge	0.76	0.00	0.26	0.01	0.47	0.00	-	-
HardNC	0.92	0.00	0.84	0.00	0.92	0.00	0.43	0.00

Note. R = Pearson's product-moment correlation coefficient
 Prob. = Bonferroni probability of chance [used in place of the usual method of calculating probability because it minimizes the risk of type I error when using multiple correlations (Wilkinson, 1990)]. HardNC = Hardiness without challenge

Work Satisfaction of Respondents

The discussion of work satisfaction data outlines the total amount of satisfaction derived, as well as the amount related to each component. Satisfaction values were provided by Stamps and Piedmonte (1986) from community hospital nurses who participated in testing the instrument. As they appear to be the only data available for this instrument, they have been used for comparison. These values are designated here as

those for the normative group.

Amount of Work Satisfaction

The authors of the Index of Work Satisfaction noted that the range of total scale scores is 44 to 308 and suggested that a score less than 155 (50%) be viewed as a "warning of lower levels of satisfaction" (Stamps & Piedmonte, 1986, p. 56). According to this standard, the group of nurses studied expressed notable dissatisfaction with their present work situation (raw scores ranging from 44.09 to 114.00 with a mean of 75.19 and a standard deviation of 11.30). The mean score of 75.19 gave a satisfaction level of 24.35%.

It should be noted that the data were collected just before the union contract in the hospitals had expired. At this time, union issues were foremost in the minds of the subjects. This fact might have affected the items they designated as important and their level of satisfaction with them.

Component Rankings

The calculation of the weighting components indicated that the respondents as a group rated the importance of the work satisfaction components in the following order: pay, autonomy, professional status, interactions, task requirements, and organizational policies. As shown in Table 12, this ranking is similar to that of the group of nurses studied by the authors of the Index of Work Satisfaction. However, the study sample deemed pay and professional status as more important, and task requirements and organizational policies less important, than did the normative group.

Table 12

Rankings of Weighting Coefficients of Components of Work
Satisfaction for Sample and Normative Group

Component	Sample	Normative Group
Autonomy	3.66	3.6
Pay	4.01	3.5
Professional Status	3.42	3.3
Interaction	2.99	3.0
Task Requirements	2.54	2.8
Organizational Policies	1.97	2.4

The descriptive information on the weighted work satisfaction level of the group as a whole is presented in Table 13. Compared to the normative group of nurses, the nurses participating in this study experienced the same amount of work satisfaction, $\bar{X} = 12.31$ for the study group compared to $\bar{u} = 12.00$ for the normative group (Stamps & Piedmonte, 1986). This falls within the 95% confidence level.

Table 13

Work Satisfaction Level of Respondents

Minimum/Maximum	Mean	Standard Deviation
7.05/18.75	12.31	1.88

As shown in Table 14, the study group derived more satisfaction from autonomy, physician-nurse interactions, and task requirements of the job than did the normative group. However, they were less satisfied with nurse-nurse interactions, pay, and the organizational policies in the workplace.

Table 14

Index of Work Satisfaction Weighted Scores

Component	Means	
	Sample	Normative Group
Professional Status	17.85	17.8
Autonomy	17.08	15.8
Interaction	14.62	13.8
Nurse-Nurse	15.96	18.0
Physician-Nurse	13.28	10.9
Task Requirements	10.56	7.8
Pay	8.13	9.4
Organizational Policies	5.61	6.7

Responses to the individual work satisfaction questions indicated agreement in many areas. Respondents generally felt that their jobs were important and that most people appreciated the importance of their care. By and large, they agreed that nurses in their area did not hesitate to pitch in

to help one another. However, they felt overburdened by too many clerical and paperwork duties. Many felt their pay was not sufficient. As well, they expressed concern regarding the lack of opportunities for advancement.

Comparison of Work Satisfaction Among Hospitals

To determine factors which might affect the experience of work satisfaction, the Index of Work Satisfaction scores were subjected to analysis of variance with demographic characteristics. The results indicated that only the employing hospital caused a significant variance ($F = 8.75$ $p < 0.000$). Therefore, although not actually an anticipated part of this study, the work satisfaction and IWS component levels from each of the three hospitals were compared and subjected to analysis of variance to determine any significant difference among them.

As can be seen in Table 15, the difference in work satisfaction levels derived primarily from satisfaction with pay. When pay was excluded, the difference became non-significant. Further analysis showed that, in one hospital, there was a much greater level of satisfaction with pay than in the other two. It is possible that the large difference in satisfaction with pay in this hospital was due to supplementary salary paid to the nurses in critical care units of certain hospitals, making this group more satisfied with pay than the others.

This non-normal distribution of the satisfaction with pay has significance for the assumption of normal distribution of the variables, necessary for Pearson's product-moment

Table 15

Variance of Index of Work Satisfaction Components Among
Hospitals

Component	<u>SS</u>	<u>DF</u>	Mean Square	<u>F</u> Ratio	Probability
Auto	86.32	2	43.16	3.06	0.05
Pay	644.11	2	322.05	29.40	0.00**
P Status	10.17	2	5.08	0.78	0.46
Int Act	7.23	2	3.61	0.46	0.63
Nurse	21.45	2	10.73	0.89	0.41
Physician	18.82	2	9.41	0.92	0.40
T Req	18.59	2	9.29	1.57	0.21
Org Pol	36.36	2	18.18	4.42	0.01*
IWS	54.31	2	27.16	8.75	0.00**
WSAT.NP	18.19	2	9.10	2.60	0.08
* $p < .05$			** $p < .01$		

Note. Auto = Autonomy T Req = Task Requirements

Org Pol = Organizational Policies

Int Act = Interaction P Status = Professional Status

WSAT.NP = Work Satisfaction without Pay component

correlation. Defying this assumption could potentially obscure a correlation which would otherwise be more apparent. For this reason, work satisfaction, both with and without the pay component, was correlated with hardiness (with and without

the challenge aspect).

Relationship of Hardiness to Work Satisfaction

In order to address the research questions, the relationship between hardiness and work satisfaction was examined by Pearson's product-moment correlation. Since the challenge component appeared to be more functionally separate than the other two components, correlations were carried out both with this component included in hardiness and without it. The component of work satisfaction, pay, which showed a non-normal distribution was also both included then excluded as shown in Table 16.

Based on the information gathered from this group of nurses, the following relationships were identified between hardiness and work satisfaction, and between each of the three components of hardiness and work satisfaction. A weak association ($r = 0.232$) was noted between hardiness and work satisfaction. This relationship strengthened ($r = 0.347$) when the controversial challenge component of hardiness was ignored. It became moderately strong ($r = 0.418$) when pay, a confounding variable in the work satisfaction concept, was eliminated.

When hardiness was separated into its components, a weak relationship ($r = 0.278$) was found between control and work satisfaction, which strengthened ($r = 0.373$) when pay was discounted. A moderate relationship ($r = 0.325$) was observed between commitment and work satisfaction. This relationship increased but only slightly ($r = 0.363$) when the views

Table 16

Relationship of Hardiness to Work Satisfaction

Hardiness and Components	IWS		WSAT.NP	
	<u>R</u>	Prob.	<u>R</u>	Prob.
Hardiness	0.232	0.016	0.298	0.002
Commitment	0.325	0.001	0.363	0.000
Control	0.278	0.004	0.373	0.000
Challenge	-0.038	0.697	-0.004	0.969
Hard.NC	0.347	0.000	0.418	0.000

Note. IWS = Index of Work Satisfaction

WSAT.NP = Work Satisfaction excluding pay

Hard.NC = Hardiness excluding challenge component

Prob. = Bonferroni Probability

regarding pay were discounted. There was no significant relationship between challenge and work satisfaction with pay included ($\underline{r} = -0.038$) or eliminated ($\underline{r} = -0.004$). These results provide further evidence that the challenge aspect of hardiness does not behave the same way as do the other two components of hardiness.

It should be noted that the elimination of the pay component from the calculation of work satisfaction provided a more accurate and reliable measure of the actual satisfaction

level of the nurses because of the skewed results in the pay component. Since there were five other components by which to measure satisfaction, the removal of this component did not affect the overall satisfaction score to any large degree (\bar{x} TotalInd = 12.31; \bar{x} WSat.NP = 13.144). As Stamps and Piedmonte (1986) noted, the components are conceptually separate. However, since the Pearson's correlation is sensitive to non-normality (Glass & Hopkins, 1984), to fail to examine the relationship without the pay component might have led to misleading results and conclusions.

When the pay component was removed from the correlation of hardiness with work satisfaction, the strength of the correlation changed from 0.23 to 0.30. This tends to validate the fact that Pearson's correlation is indeed sensitive to normality and justifies the removal of the pay component.

The removal of the challenge component from the hardiness concept was a conceptual rather than a statistical issue. The means of measuring challenge in the past have been less reliable than that for the other two hardiness components, and challenge has behaved differently from the other two components in numerous studies. Therefore, hardiness was correlated both with and without challenge to note any difference in the results. It appeared from the results of this comparison that challenge again behaved differently from the other two hardiness components, showing no relationship to work satisfaction with this group of subjects.

In summary, the average nurse in the study was a single, white, Protestant female of 33 years of age who considered

that her family originated in North America. With a diploma in nursing, she worked 12-hour shifts in a general ICU in an urban hospital. She had 5.18 years experience in the present work unit, 6.34 years in critical care, and 4.46 years in nursing prior to employment in critical care. It appears from the data available that this sample of critical care nurses is representative of the population in Ontario.

The average nurse in the study was as hardy as the norm, clearly expressing a sense of empowerment, of challenge in the face of change, and of commitment to her work.

From the work satisfaction scores, the ranking of the components by importance was: pay, autonomy, professional status, interaction with others, task requirements and organization policies. Although this group of nurses ranked pay as important, they derived very little satisfaction from it. Most satisfaction came from professional status, autonomy, and nurse-nurse interaction. Data showed that those at Hospital #3 were more satisfied, largely due to a much greater satisfaction with pay.

The findings of this study indicate there is a weak-to-moderate relationship between hardiness and work satisfaction, due primarily to correlations between control and commitment with work satisfaction.

Discussion of Findings

The main findings of this study are consistent with those of studies exploring associations between control and work satisfaction (Kobasa & Hilker, 1982; McLaney & Hurrell, Jr,

1988; Spector, 1982; Tetrick & LaRocco, 1987; Walek, 1979; Weisman, 1982; Weisman, Alexander, & Chase, 1981) and with those examining hardiness and work satisfaction (Kennedy, 1988; Manning et al., 1988). To review, Manning et al. found a moderately strong relationship between hardiness and work satisfaction ($r = 0.37$ $p < .01$) with 468 subjects working in insurance and manufacturing companies. Kennedy found a weaker, but again positive and significant, association between hardiness and work satisfaction with 173 law enforcement officers ($r = 0.214$ $p < .0001$). Their correlation coefficients are similar to those found in this study (hardiness and work satisfaction, $r = 0.232$ $p < .016$; and hardiness without challenge and work satisfaction without pay, $r = 0.418$ $p < .000$).

The observation that challenge was independent of work satisfaction is also congruent with the results of other studies. Numerous authors have found that only control and commitment affected health (Dermatis, 1989/90; Hull et al., 1987), work perceptions (Schmied & Lawler, 1986) and stress and burnout (Ganellen & Blaney, 1984; Keane et al., 1985; Topf, 1989). Manning et al. (1988) found in using the original five hardiness instruments that challenge correlated only weakly with commitment ($r = 0.17$) and control ($r = 0.27$) and did not correlate with any of their outcome measures, work tension and satisfaction, quality of life, affect, negative emotions, or somatic complaints.

In addition to its consistency with other literature, the finding of a correlation between hardiness and the work

satisfaction of critical care nurses also supports Packard and Motowidlo's model (1987). However, it does not demonstrate a causal relationship, nor does it identify the directions of these effects. It should be noted that even with pay and challenge excluded, hardiness was found to contribute only 17.5% of the variance in work satisfaction ($r^2 = .418 \times .418 = 17.47$), indicating that other variables besides hardiness contribute to work satisfaction.

Burns and Grove (1987) observed that weak correlations tend to be disregarded in nursing research. They blamed the failure to find stronger correlations on three factors: (1) nursing measurements which were not powerful enough to detect fine discriminations; (2) variables without a wide enough variance for a correlation to be detected (small homogeneous samples will not detect relationships clearly); and (3) bivariate analyses which did not indicate the complexity of the situation (p.510). The latter two factors particularly may have obscured stronger relationships in this study.

In conclusion, the results of this study of critical care nurses showed a weak-to-moderate relationship between hardiness and work satisfaction, due primarily to correlations between control and commitment with work satisfaction. This result is congruent with the model, which states that personal characteristics affect work satisfaction. It also supports hardiness theory, which claims that hardy people transform work stressors into positive situations. Finally, the finding of a relationship for critical care nurses is consistent with the results of two other studies studying these variables but

using different instruments and subjects. The relationship found between hardiness and work satisfaction among critical care nurses also provides a basis for further studies designed to examine the possibility of a causal relationship.

CHAPTER V

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

Summary

The purpose of this study was to investigate the role that hardiness might play in the work satisfaction among critical care nurses. It was based on a model developed by Packard and Motowidlo (1987) and adapted for this study, which relates the factors which produce work stress and how this stress affects work performance and work satisfaction. The model designates personal characteristics and job conditions as the two factors determining the amount of stress experienced and affecting the amount of depression and hostility sensed by the worker. The stress level and the resultant emotions then influence both the quality of work performance and the amount of work satisfaction. This study examined only one personal characteristic, hardiness, and its three components, and their relationship to work satisfaction.

The following were the research questions:

1. What is the relationship between hardiness and work satisfaction?
2. What is the relationship between control and work satisfaction?
3. What is the relationship between commitment and work satisfaction?
4. What is the relationship between challenge and work satisfaction?

A descriptive correlational design was used to address the questions. Data were collected from 109 critical care

nurses from three urban hospitals, using the Personal Views Survey (assessing hardiness), the Index of Work Satisfaction (evaluating work satisfaction) and an investigator-designed tool for collecting demographic data.

Work satisfaction was correlated with hardiness and each of its components, control, commitment and challenge. The results indicated statistically significant, though weak to moderate, correlations between hardiness (and two of its components, control and commitment) and work satisfaction. The third component of hardiness, challenge, showed no such relationship.

The correlations found in this study were consistent with those in the literature. They also support the Packard and Motowidlo (1987) model of work satisfaction and the stress-resistant concept of hardiness by linking personal characteristics (hardiness) and work satisfaction. However, they do not imply causality or directionality of the concepts.

Conclusions

Conclusions based on the findings of the study are the following:

1. The Index of Work Satisfaction tool appears useful in providing data both for research and for management of hospital work satisfaction.
2. The Personal Views Survey measuring hardiness contains components which appear to act individually, as other researchers have noted.
3. This group of critical care nurses were found to have a

normal amount of hardiness but to have low job satisfaction.

4. Moderate relationships were noted between control and work satisfaction and between commitment and work satisfaction for this group of critical care nurses.

5. No relationship was found between challenge and work satisfaction.

6. The strongest relationship was between hardiness without the challenge component and work satisfaction without the pay component.

7. Findings indicate that possessing a sense of control and commitment contributes in a minor way (17.5%) to the variance of work satisfaction.

Implications

Further research may determine whether hardiness causes work satisfaction or vice versa or that an unknown factor causes positive effects in the amounts of both hardiness and work satisfaction. In the meantime, it would seem reasonable for those who desire satisfied workers to create in their employees a sense of control of their own destiny and of commitment to the work at hand.

Maddi, one of the original researchers into hardiness, claims that people acquire hardiness and its components, control, commitment and challenge, if they (1) experience a breadth and variety of events early in life; (2) have stimulation and support for exercising the cognitive abilities of symbolization, imagination and judgment; (3) receive approval and admiration for doing things themselves; and (4)

have role models who advocate hardiness and demonstrate it in their functioning (Kobasa, 1984; Kobasa, Maddi, & Kahn, 1982, p.176).

In their book, The Hardy Executive: Health Under Stress, Maddi and Kobasa (1984) suggest that hardiness can be increased in adults by either individual or group counselling and can be supported by creating the appropriate work atmosphere. They claim that maintaining hardiness in employees contributes to their health, morale, and effectiveness and suggest that employees' hardiness can be fostered by creating an atmosphere that promotes employee commitment, control and challenge. In such an atmosphere, the following characteristics are noted: (1) there is more reward than punishment (to foster commitment versus alienation); (2) the tasks are moderate in difficulty (to foster control versus powerlessness); (3) changes are promoted as full of possibility (to foster challenge versus threat).

Maddi and Kobasa warn that simply communicating information about the personality orientation, hardiness, is not sufficient to increase employee hardiness. For significant personality change, they suggest group counselling with eight to ten employees in sessions of one to two hours weekly for about eight weeks. In the expectation of some of the above positive results, Maddi held an eight-week educational session for business executives. Following the session, he found that their hardiness scores had increased, and their distress scores and their blood pressures had decreased (Kobasa, 1984; Maddi & Kobasa, 1984; Pollock, 1989).

Rich and Rich (1987) also reported, based on a small pilot study, that hardiness could be increased in nurse managers through small group training.

Nursing Administrators and Educators

It may seem to be a difficult task within large institutions to give employees real feelings of control over their work situation and to provide an atmosphere that inspires commitment. However, to neglect to do so may only lead to a future of continued discontent, strikes, and costly turnover. To nurse managers, Wolf (1990) suggests creating an "institutional mind-set" (p.11) which fosters control, commitment, and challenge for dealing more productively with stress.

In order to assist nurses to feel control over and to be responsible for their own success and satisfaction, administrators should allow nurses to participate in their work situation, to make decisions, and to deal with the results of the decisions. To enable this kind of empowerment, nurses must acquire the knowledge and ability to make these decisions. This means attracting a high level of student to nursing, encouraging them to a high level of empowerment, and maintaining it at that level throughout their careers.

To produce nurses who feel committed to their patients, their profession, and their employers, administrators must be committed to them--committed enough to produce an educational and work environment which offers stimulation, support, approval, and admiration. They must also be committed to provide nurses with the tools to do their job well and to

fully enjoy the rewards that this produces. This may range from providing the necessary books in the library to providing emotional support for a nurse dealing with a difficult patient. Employers who empower nurses appear less likely to have discontented workers, and those who engender commitment appear less likely to lose their staff (Walek, 1979).

Nursing Practice

Mechanisms for fostering hardiness have yet to be tested and proven. Nevertheless, evidence of the association of hardiness with positive personal benefits provides rationale for nurses and, indeed, people in any stressful career, to make efforts to increase their own hardiness. A number of authors have discussed ways of increasing hardiness. Jaffe and Scott (1988) in their book, Take This Job and Love It, describe how to teach oneself hardiness and suggest ways of staying committed, feeling in control of one's destiny, and responding positively to the challenge of change. Wynia-Takei (1989/1990) also advocates increasing one's own hardiness through assertiveness, adaptive thinking, relaxation, visualization, affirmations, mediation, and good health practices. Lindsey and Hills (1992) suggest that nurses use the concept of hardiness in "areas of health promotion, health maintenance and in disease prevention" (p.48). However, the link between hardiness and health requires further study.

Further Research

Both the concept of hardiness and the model of work satisfaction/performance could be utilized more fully in nursing. However, because hardiness does not appear to be a

unitary concept and the challenge component behaves differently from the other two components of hardiness, it is important that researchers use the hardiness concept (as measured by the Personal Views Survey) with caution. Measurements should include values for each of the component parts, as well as hardiness as a whole, to avoid errors in conclusions. Other tools for measuring hardiness have recently been developed (Dermatis, 1989/90; Horan, 1991; Nowack, 1989; O'Connor, 1989). Perhaps these should be reviewed by researchers wishing to measure hardiness.

Evidence from the literature indicated that a curvilinear relationship existed between hardiness and the alleviation of burnout (S. Dane, personal communication, December 27, 1989; Manning et al., 1988; McCranie et al., 1987). That is, at low-to-moderate levels of stress, the harder a person is, the more likely he/she is to manage this stress positively. However, at higher levels of stress, hardy people are more likely to burn out than those low in hardiness. This possibility should be further examined.

More concrete knowledge is needed regarding the development and teaching of hardiness. Studies of both a qualitative nature to delineate the concept further and a quantitative nature to measure the effect of teaching hardiness, as Maddi envisioned it, would be useful. Studies of the effect of hardiness on the health of patients--both those aimed at health-promotion behaviour and the management of chronic disease--have shown promise (Call & Davis, 1989; Hannah, 1988; Lambert, Lambert, Klipple, & Mewshaw, 1989;

Wiebe & McCallum, 1986). These should be continued. A study examining more of the components of the Packard and Motowidlo (1987) model in a longitudinal or path analysis design would help to validate their work and offer more support to the practical applications for both hardiness and the other factors involved in work satisfaction.

In conclusion, the theoretical value of this study lies in the following four areas. First, the study has measured the amount of hardiness in critical care nurses, providing additional data regarding the level of hardiness in this population. Second, it has added to the evidence regarding the value of the Personal Views Survey and the Index of Work Satisfaction. Third, it has offered further evidence of a relationship between hardiness and work satisfaction. Finally, it has supported the work satisfaction/performance model of Packard and Motowidlo (1987).

It appears from preliminary research that hardiness can be learned. It is possible that teaching hardiness to improve a sense of control and commitment within nursing work and educational settings will increase work satisfaction. With further evidence of the way to engender hardiness and with establishment of a causal relationship between hardiness and work satisfaction, there may be another approach to several of nursing's problems. Increased hardiness levels may result in more satisfaction with the work of nursing, thereby decreasing the cost of grievances, absenteeism, turnover, and strikes, and maximizing morale and the quality of care.

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APPENDIX A

Personal Views Survey

PERSONAL VIEWS SURVEY

69

Below are some items that you may agree or disagree with. Please indicate how you feel about each one by circling a number from 0 to 3 in the space provided. A *zero* indicates that you feel the statement is not at all true; circling a *three* means that you feel the item is **completely true**.

As you will see, many of the items are worded very strongly. This is to help you decide the *extent* to which you agree or disagree.

Please read all the items carefully. Be sure to answer all on the basis of the way you feel now. Don't spend too much time on any one item.

- 0 = Not at all true
1 = A little true
2 = Quite a bit true
3 = Completely true

- | | | | | |
|---|---|---|---|---|
| 1. I often wake up eager to take up my life where it left off the day before | 0 | 1 | 2 | 3 |
| 2. I like a lot of variety in my work. | 0 | 1 | 2 | 3 |
| 3. Most of the time, my bosses or superiors will listen to what I have to say. | 0 | 1 | 2 | 3 |
| 4. Planning ahead can help avoid most future problems. | 0 | 1 | 2 | 3 |
| 5. I usually feel that I can change what might happen tomorrow, by what I do today . . | 0 | 1 | 2 | 3 |
| 6. I feel uncomfortable if I have to make any changes in my everyday schedule | 0 | 1 | 2 | 3 |
| 7. No matter how hard I try, my efforts will accomplish nothing | 0 | 1 | 2 | 3 |
| 8. I find it difficult to imagine getting excited about working | 0 | 1 | 2 | 3 |
| 9. No matter what you do, the "tried and true" ways are always the best | 0 | 1 | 2 | 3 |
| 10. I feel that it's almost impossible to change my spouse's mind about something | 0 | 1 | 2 | 3 |
| 11. Most people who work for a living are just manipulated by their bosses. | 0 | 1 | 2 | 3 |
| 12. New laws shouldn't be made if they hurt a person's income | 0 | 1 | 2 | 3 |
| 13. When you marry and have children you have lost your freedom of choice. | 0 | 1 | 2 | 3 |
| 14. No matter how hard you work, you never really seem to reach your goals. | 0 | 1 | 2 | 3 |
| 15. A person whose mind seldom changes can usually be depended on to have
reliable judgment. | 0 | 1 | 2 | 3 |
| 16. I believe most of what happens in life is just meant to happen | 0 | 1 | 2 | 3 |
| 17. It doesn't matter if you work hard at your job, since only the bosses profit
by it anyway | 0 | 1 | 2 | 3 |
| 18. I don't like conversations when others are confused about what they mean to say . . | 0 | 1 | 2 | 3 |
| 19. Most of the time it just doesn't pay to try hard, since things never turn
out right anyway | 0 | 1 | 2 | 3 |
| 20. The most exciting thing for me is my own fantasies. | 0 | 1 | 2 | 3 |

0 = Not at all true
 1 = A little true
 2 = Quite a bit true
 3 = Completely true

70

- | | | | | |
|--|---|---|---|---|
| 21. I won't answer a person's questions until I am very clear as to what he is asking. . . . | 0 | 1 | 2 | 3 |
| 22. When I make plans I'm certain I can make them work | 0 | 1 | 2 | 3 |
| 23. I really look forward to my work | 0 | 1 | 2 | 3 |
| 24. It doesn't bother me to step aside for a while from something I'm involved in,
if I'm asked to do something else. | 0 | 1 | 2 | 3 |
| 25. When performing a difficult task at work, I know when I need to ask for help | 0 | 1 | 2 | 3 |
| 26. It's exciting for me to learn something about myself | 0 | 1 | 2 | 3 |
| 27. I enjoy being with people who are unpredictable. | 0 | 1 | 2 | 3 |
| 28. I find it's usually very hard to change a friend's mind about something | 0 | 1 | 2 | 3 |
| 29. Thinking of yourself as a free person just makes you feel frustrated and unhappy . . | 0 | 1 | 2 | 3 |
| 30. It bothers me when something unexpected interrupts my daily routine | 0 | 1 | 2 | 3 |
| 31. When I make a mistake, there's very little I can do to make things right again. . . . | 0 | 1 | 2 | 3 |
| 32. I feel no need to try my best at work, since it makes no difference anyway | 0 | 1 | 2 | 3 |
| 33. I respect rules because they guide me | 0 | 1 | 2 | 3 |
| 34. One of the best ways to handle most problems is just not to think about them | 0 | 1 | 2 | 3 |
| 35. I believe that most athletes are just born good at sports. | 0 | 1 | 2 | 3 |
| 36. I don't like things to be uncertain or unpredictable. | 0 | 1 | 2 | 3 |
| 37. People who do their best should get full financial support from society | 0 | 1 | 2 | 3 |
| 38. Most of my life gets wasted doing things that don't mean anything | 0 | 1 | 2 | 3 |
| 39. Lots of times I don't really know my own mind | 0 | 1 | 2 | 3 |
| 40. I have no use for theories that are not closely tied to the facts | 0 | 1 | 2 | 3 |
| 41. Ordinary work is just too boring to be worth doing. | 0 | 1 | 2 | 3 |
| 42. When other people get angry at me, it's usually for no good reason | 0 | 1 | 2 | 3 |
| 43. Changes in routine bother me. | 0 | 1 | 2 | 3 |
| 44. I find it hard to believe people who tell me that the work they do is
of value to society | 0 | 1 | 2 | 3 |
| 45. I feel that if someone tries to hurt me, there's usually not much I can do
to try and stop him | 0 | 1 | 2 | 3 |
| 46. Most days, life just isn't very exciting for me. | 0 | 1 | 2 | 3 |
| 47. I think people believe in individuality only to impress others. | 0 | 1 | 2 | 3 |
| 48. When I'm reprimanded at work, it usually seems to be unjustified. | 0 | 1 | 2 | 3 |
| 49. I want to be sure someone will take care of me when I get old | 0 | 1 | 2 | 3 |
| 50. Politicians run our lives | 0 | 1 | 2 | 3 |

APPENDIX B

Index of Work Satisfaction

Part A (Paired Comparisons)

Listed and briefly defined on this sheet of paper are six terms or factors that are involved in how people feel about their work situation. Each factor has something to do with "work satisfaction." We are interested in determining which of these is most important to you in relation to the others.

Please carefully read the definitions for each factor as given below:

1. Pay—dollar remuneration and fringe benefits received for work done
2. Autonomy—amount of job-related independence, initiative, and freedom, either permitted or required in daily work activities
3. Task Requirements—tasks or activities that must be done as a regular part of the job
4. Organizational Policies—management policies and procedures put forward by the hospital and nursing administration of this hospital
5. Interaction—opportunities presented for both formal and informal social and professional contact during working hours
6. Professional Status—overall importance or significance felt about your job, both in your view and in the view of others

Scoring. These factors are presented in pairs on the questionnaire that you have been given. Only 15 pairs are presented: this is every set of combinations. No pair is repeated or reversed.

For each pair of terms, decide which one is *more important* for your job satisfaction or morale. Please indicate your choice by a check on the line in front of it. For example: If you felt that Pay (as defined above) is more important than Autonomy (as defined above), check the line before Pay.

___ Pay or ___ Autonomy

We realize it will be difficult to make choices in some cases. However, please do try to select the factor which is more important to you. Please make an effort to answer every item; do not change any of your answers.

- | | | |
|---------------------------------|----|-----------------------------|
| 1. ___ Professional Status | or | ___ Organizational Policies |
| 2. ___ Pay | or | ___ Task Requirements |
| 3. ___ Organizational Policies | or | ___ Interaction |
| 4. ___ Task Requirements | or | ___ Organizational Policies |
| 5. ___ Professional Status | or | ___ Task Requirements |
| 6. ___ Pay | or | ___ Autonomy |
| 7. ___ Professional Status | or | ___ Interaction |
| 8. ___ Professional Status | or | ___ Autonomy |
| 9. ___ Interaction | or | ___ Task Requirements |
| 10. ___ Interaction | or | ___ Pay |
| 11. ___ Autonomy | or | ___ Task Requirements |
| 12. ___ Organizational Policies | or | ___ Autonomy |
| 13. ___ Pay | or | ___ Professional Status |
| 14. ___ Interaction | or | ___ Autonomy |
| 15. ___ Organizational Policies | or | ___ Pay |

Part B (Attitude Questionnaire)

The following items represent statements about satisfaction with your occupation. Please respond to each item. It may be very difficult to fit your responses into the seven categories; in that case, select the category that *comes closest* to your response to the statement. It is very important that you give your *honest* opinion. Please do not go back and change any of your answers.

Instructions for Scoring Please circle the number that most closely indicates how you feel about each statement. The *left* set of numbers indicates degrees of *disagreement*. The *right* set of numbers indicates degrees of *agreement*. The *center* number means "undecided." Please use it as little as possible. For example, if you *strongly disagree* with the first item, circle 1; if you *moderately agree* with the first statement, you would circle 6.

Remember: The more strongly you feel about the statement, the further from the center you should circle, with disagreement to the left and agreement to the right.

	Disagree				Agree		
	1	2	3	4	5	6	7
1. My present salary is satisfactory.	1	2	3	4	5	6	7
2. Most people do not sufficiently appreciate the importance of nursing care to hospital patients.	1	2	3	4	5	6	7
3. The nursing personnel on my service do not hesitate to pitch in and help one another out when things get in a rush.	1	2	3	4	5	6	7
4. There is too much clerical and "paperwork" required of nursing personnel in this hospital.	1	2	3	4	5	6	7
5. The nursing staff has sufficient control over scheduling their own work shifts in my hospital.	1	2	3	4	5	6	7
6. Physicians in general cooperate with nursing staff on my unit.	1	2	3	4	5	6	7
7. I feel that I am supervised more closely than is necessary.	1	2	3	4	5	6	7
8. Excluding myself, it is my impression that a lot of nursing personnel at this hospital are dissatisfied with their pay.	1	2	3	4	5	6	7
9. Nursing is a long way from being recognized as a profession.	1	2	3	4	5	6	7
10. New employees are not quickly made to "feel at home" on my unit.	1	2	3	4	5	6	7
11. I think I could do a better job if I did not have so much to do all the time.	1	2	3	4	5	6	7
12. There is a great gap between the administration of this hospital and the daily problems of the nursing service.	1	2	3	4	5	6	7
13. I feel I have sufficient input into the program of care for each of my patients.	1	2	3	4	5	6	7
14. Considering what is expected of nursing service personnel at this hospital, the pay we get is reasonable.	1	2	3	4	5	6	7
15. There is no doubt whatever in my mind that what I do on my job is really important.	1	2	3	4	5	6	7
16. There is a good deal of teamwork and cooperation between various levels of nursing personnel on my service.	1	2	3	4	5	6	7

	Disagree				Agree		
17. I have too much responsibility and not enough authority.	1	2	3	4	5	6	7
18. There are not enough opportunities for advancement of nursing personnel at this hospital.	1	2	3	4	5	6	7
19. There is a lot of teamwork between nurses and doctors on my own unit.	1	2	3	4	5	6	7
20. On my service, my supervisors make all the decisions. I have little direct control over my own work.	1	2	3	4	5	6	7
21. The present rate of increase in pay for nursing service personnel at this hospital is not satisfactory.	1	2	3	4	5	6	7
22. I am satisfied with the types of activities that I do on my job.	1	2	3	4	5	6	7
23. The nursing personnel on my service are not as friendly and outgoing as I would like.	1	2	3	4	5	6	7
24. I have plenty of time and opportunity to discuss patient care problems with other nursing service personnel.	1	2	3	4	5	6	7
25. There is ample opportunity for nursing staff to participate in the administrative decision-making process.	1	2	3	4	5	6	7
26. A great deal of independence is permitted, if not required, of me.	1	2	3	4	5	6	7
27. What I do on my job does not add up to anything really significant.	1	2	3	4	5	6	7
28. There is a lot of "rank consciousness" on my unit. Nursing personnel seldom mingle with others of lower ranks.	1	2	3	4	5	6	7
29. I have sufficient time for direct patient care.	1	2	3	4	5	6	7
30. I am sometimes frustrated because all of my activities seem programmed for me.	1	2	3	4	5	6	7
31. I am sometimes required to do things on my job that are against my better professional nursing judgment.	1	2	3	4	5	6	7
32. From what I hear from and about nursing service personnel at other hospitals, we at this hospital are being fairly paid.	1	2	3	4	5	6	7
33. Administrative decisions at this hospital interfere too much with patient care.	1	2	3	4	5	6	7
34. It makes me proud to talk to other people about what I do on my job.	1	2	3	4	5	6	7
35. I wish the physicians here would show more respect for the skill and knowledge of the nursing staff.	1	2	3	4	5	6	7
36. I could deliver much better care if I had more time with each patient.	1	2	3	4	5	6	7
37. Physicians at this hospital generally understand and appreciate what the nursing staff does.	1	2	3	4	5	6	7
38. If I had the decision to make all over again, I would still go into nursing.	1	2	3	4	5	6	7
39. The physicians at this hospital look down too much on the nursing staff.	1	2	3	4	5	6	7
40. I have all the voice in planning policies and procedures for this hospital and my unit that I want.	1	2	3	4	5	6	7
41. My particular job really doesn't require much skill or "know-how."	1	2	3	4	5	6	7
42. The nursing administrators generally consult with the staff on daily problems and procedures.	1	2	3	4	5	6	7

	Disagree					Agree	
	1	2	3	4	5	6	7
43. I have the freedom in my work to make important decisions as I see fit, and can count on my supervisors to back me up.							
44. An upgrading of pay schedules for nursing personnel is needed at this hospital.							

Notes

¹Stamps, P.L., et al. "Measurement of Work Satisfaction Among Health Professionals." *Medical Care* 16: 337-52, April 1978.

²Slavitt, D.B., et al. "Nurses' Satisfaction with Their Work Situation." *Nursing Research* 22:114-20, March/April 1978.

³———. "Measuring the Levels of Satisfaction of Hospital Nurses." *Hospital and Health Services Administration* 24:62-77, Summer 1979.

APPENDIX C

Demographic Information Form

Information Sheet

Please feel free to omit any section which you would rather not answer.

Gender: M___ F___

Age in Years:

20-29___ 30-39___ 40-49___ 50-59___ 60-69___

Highest level of Nursing Education:

Diploma___ Associate___ Baccalaureate___
Masters___ Other___

Race: White___ Black___ Asian___
Native Indian___ Other___

Marital Status: Single___ Married___ Separated___ Divorced___
Living together___

Name of Work Unit:

Emergency___ Cardio-vasc or Neurosurgical ICU___
Medical/Surgical or General ICU___ Coronary Care___
Neonatal ICU___ Trauma or Burn ICU___
Acute Care or Step Down Unit___
Post Anaesthesia/Recovery___

Hospital: _____

Length of time working in this area

Years___ Months___

Religion: Protestant___ Catholic___ Jewish___ Other___
None___

Approximate amount and type of shiftwork expressed as a percentage or fraction (eg. days 1/3 evenings 1/3 nights 1/3 and 8hr. 50% 10hrs. 0% 12hrs. 50%)

Days___ Evenings___ Nights___
8hrs___ 10hrs___ 12hrs___

Country of Origin of Family_____

Total Length of time worked in any critical care area

Years___ Months___

Length of time worked in nursing prior to employment in critical care

Years___ Months___

APPENDIX D

Letter to Nurses

Dear Critical Care Nurse,

I am a student in the M.S.N. program at the University of British Columbia School of Nursing. My thesis concerns factors affecting work satisfaction among critical care nurses and the enclosed instruments are designed to assist in identifying them. Your participation is very important to the success of the study.

Please complete the Personal Views Survey, Index of Work Satisfaction Tool, and the information sheet and return them to me in the stamped self-addressed envelope as soon as possible. The three instruments should take about 20 to 30 minutes to complete.

Your participation in the study is voluntary and may be withdrawn at any time without penalty for you or the institution. It is assumed that you have given consent to participate if you return the completed instruments. To ensure the confidentiality of your response, please do not put your name on the questionnaire; it will be assigned a code number for identification.

A report of the study findings will be provided to the institution. If you wish to receive a report, please provide your name and address in a separate envelope.

If you have questions about the study, please call me at (416) 852-5014. Thank you for your assistance.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Robin John', with a stylized flourish at the end.

Robin John, BScN, RN

APPENDIX E

Calculation of the Index of Work Satisfaction

The procedure provided by the authors of the Index of Work Satisfaction (IWS), Stamps and Piedmonte (1986) was utilized for calculation of work satisfaction. The first step was to determine how important each component was to the participants as a group; that is, what was the weighting component. A frequency matrix showing the frequency with which each component was chosen over the other was established. From the frequency table, a proportion table was created. Each frequency value was changed to a proportion value by dividing by the number of respondents. To obtain the component weighting coefficient from the proportion matrix, a third table, the Z matrix of normal deviates was obtained. Each new value was determined by taking the proportion value and referring to Edwards' table to find the Z value (Stamps & Piedmonte, 1986, p.70). To each Z column mean, a constant of +3.100 was added to eliminate the negative signs and zeros. This final value was the component weighting coefficient.

The second step was the scoring of the attitude items. The responses to the questions were grouped according to which work component they belonged and the Likert value of each response added to provide individual component scores. Then, the component scores were totalled to provide raw work satisfaction scores.

The third step was the calculation of the Index of Work Satisfaction. To determine this, the component weighting coefficient was multiplied by each individual's mean component score to give an adjusted value which considered both the level of importance and the present amount of satisfaction

derived from each component. Values for individual components were then averaged to provide a total Index of Work Satisfaction for each participant (Stamps & Piedmonte, 1986, p.79-80).

Index of Work Satisfaction (IWS) Response Frequency Matrix

Most Favoured

<u>Least</u>	Pay	Auto	T Req	Org Pol	P Status	Int Act
<u>Favoured</u>						
Pay	0	45	12	7	30	14
Auto	60	0	18	13	39	30
T Req	94	87	0	29	84	68
Org Pol	98	91	77	0	96	91
P Status	75	66	21	10	0	38
Int Act	91	75	36	15	67	0

Note. N does not equal 109 in all paired preferences because some participants omitted this section.

Auto = Autonomy P Status = Professional Status

T Req = Task Requirements Int Act = Interaction

Org Pol = Organizational Policies

IWS Participant Frequency Matrix

	<u>Most Favoured</u>					
<u>Least</u>	Pay	Auto	T Req	Org Pol	P Status	Int Act
<u>Favoured</u>						
Pay	0	105	106	105	105	105
Auto	105	0	105	104	105	105
T Req	106	105	0	106	105	104
Org Pol	105	104	106	0	106	106
P Status	105	105	105	106	0	105
Int Act	105	105	104	106	105	0

Note. Auto = Autonomy T Req = Task Requirements

Org Pol = Organizational Policies

P Status = Professional Status Int Act = Interaction

IWS Proportion Matrix

<u>Most Favoured</u>						
<u>Least</u>	Pay	Auto	T Req	Org Pol	P Status	Int Act
<u>Favoured</u>						
Pay	0.000	0.429	0.113	0.067	0.286	0.133
Auto	0.571	0.000	0.171	0.125	0.371	0.286
T Req	0.887	0.829	0.000	0.274	0.800	0.654
Org Pol	0.933	0.875	0.726	0.000	0.906	0.858
P Status	0.714	0.629	0.200	0.094	0.000	0.362
Int Act	0.867	0.714	0.346	0.142	0.638	0.000
Sum	3.97	3.48	1.56	0.70	3.00	2.29

Note. Auto = Autonomy Int Act = Interaction

T Req = Task Requirements

P Status = Professional Status

Org Pol = Organizational Policies

IWS Z Matrix of Weighting Coefficients (Wt Coef)

<u>Least</u>	<u>Most Favoured</u>					
	Pay	Auto	T Req	Org Pol	P Status	Int Act
<u>Favoured</u>						
Pay	0.000	0.179	1.211	1.499	0.565	1.112
Auto	-0.179	0.000	0.950	1.150	0.329	0.565
T Req	-1.211	-0.950	0.000	0.601	0.842	0.396
Org Pol	-1.499	-1.150	-0.601	0.000	1.317	1.071
PStatus	-0.565	-0.329	-0.842	-1.317	0.000	0.353
Int Act	-1.112	-0.565	-0.396	-1.071	-0.353	0.000
Sum	4.566	2.815	-2.798	-0.563	1.618	-0.563
Mean	0.913	0.563	0.324	-1.128	0.324	-0.113
(plus 3.100)						
Wt Coef	4.013	3.663	2.540	1.972	3.424	2.987

Note. Auto = Autonomy P Status = Professional Status
 Int Act = Interaction Org Pol = Organization Policies
 T Req = Task Requirements